

**Amendments to the Claims:**

The listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (Original) A control method of premix compression self-igniting internal combustion engine for premixing air and fuel in a combustion chamber, and self-igniting the mixture by compression, comprising the steps of temporarily reopening an exhaust valve in compression stroke, freely varying the reopened valve closure timing, and changing the effective compression ratio to an effective compression ratio capable of obtaining an optimum self-ignition timing in each operation region.
2. (Original) The control method of premix compression self-igniting internal combustion engine of claim 1, wherein the reopened valve closure timing is controlled so as to heighten the effective compression ratio in a small load operation region, and lower the effective compression ratio along with the increase of load.
3. (Original) The control method of premix compression self-igniting internal combustion engine of claim 1, wherein a reopened valve closure timing map is compiled by describing the valve closure timing for obtaining an optimum ignition timing in each operation region depending on the engine speed and load, the

engine speed and load are detected during operation of the engine, and the reopened valve closure timing is varied on the basis of the valve closure timing map.

4. (Original) The control method of premix compression self-igniting internal combustion engine of claim 1, wherein the fuel injection start timing is delayed from the reopened valve closure timing.

5. (Original) The control method of premix compression self-igniting internal combustion engine of claim 1, wherein the engine includes an EGR device, and EGR rates are detected, and thereby the effective compression ratio is heightened by advancing the reopened valve closure timing in an operation region of high EGR rate, and the effective compression ratio is lowered by retarding the reopened valve closure timing in an operation region of low EGR rate.

6. (Original) The control method of premix compression self-igniting internal combustion engine of claim 1, wherein the intake air temperature is detected, and the effective compression ratio is lowered by retarding the reopened valve closure timing when the intake air temperature is high, and the reopened valve closure timing is advanced when the intake air temperature is low.

7. (Original) The control method of premix compression self-igniting internal combustion engine of claim 1, wherein the cooling water temperature is detected, and the effective compression ratio is heightened by advancing the closure timing of the reopened exhaust valve when the cooling water temperature is low, and the reopened valve closure timing is retarded when the cooling water temperature is high.

8. (Currently Amended) The control method of premix compression self-igniting internal combustion engine ~~of any one of claims 1 to 7~~ of claim 1, wherein knocking or other abnormal combustion is detected by an abnormal combustion detection sensor, and the reopened valve closure timing is retarded in the event of abnormal combustion and controlled to be changed to a highest effective compression ratio in a range not to cause abnormal combustion.

9. (Currently Amended) The control method of premix compression self-igniting internal combustion engine ~~of any one of claims 1 to 8~~ of claim 1, wherein a limiting effective compression ratio map for suppressing the maximum cylinder internal pressure within an allowable range in each operation region is compiled, and the reopened valve closure timing is set so as not to exceed the limiting effective compression ratio in each operation region.